

List of Publications

1. "Responsivities of n-type GaAs/InGaAs/AlGaAs Step Multiple-quantum-well Infrared Detectors", Appl. Phys. Lett, 80, 145-147 (2002). (C. W. Cheah, **G. Karunasiri**, L. S. Tan, and L. F. Zhou)
2. "Measurement of Excited State Position of Bound-to-Bound Quantum Well Infrared Detectors", J. Appl. Phys., 90, 2045-2047 (2001). (L. Zhou, **G. Karunasiri** and Y. H. Chee)
3. "Effects of Hydrostatic Pressure on Raman Scattering in Ge Quantum Dots", Phys. Rev. B, 63, 1-4 (2001) (KL Teo, L Qin, IM Noordin, **G. Karunasiri**, ZX Shen, OG Schmidt, K. Eberl, HJ Queisser)
4. "Circuit for Microbolometer Bias-heating Cancellation", Electron. Lett 36, 1993-1994 (2000) (XP Xu, XB Qian, and **G. Karunasiri**)
5. "Performance of Microbolometer Focal Plane Arrays under Varying Pressure", IEEE EDL, 21, 233-235 (2000). (X. He, **G. Karunasiri**, T. Mei, W. J. Zeng, P. Neuzil, and U. Sridhar)
6. "Circuit Model for Quantum Well Infrared Photodetectors and its Comparison with Experiments ", Physica E, 7, 135-138 (2000). (Y.H. Chee and **G. Karunasiri**)
7. "A Microbolometer Temperature Sensor with Novel Self-heating Compensation Scheme", Sensors & Actuators, 79, 122-127 (2000). (MVS Ramakrishna, **G. Karunasiri**, N. Pavel, U. Sridhar, and W. J. Zeng)
8. "Vacancy-enhanced Intermixing in Highly Strained InGaAs/GaAs Multiple Quantum Well Photodetector", Journal of Appl. Phys., 86, 3402-3407 (1999). (A.S.W. Lee, E.H. Li, and **G. Karunasiri**)
9. "Electro-thermal Modeling of Infrared Microemitters Using PSPICE", Sensors & Actuators, A72, 110-114 (1999). (S. Ravi Kiran and **G. Karunasiri**)
10. "Intermixing in Strained InGaAs/GaAs Quantum Well Infrared Photodetectors", Appl. Phys. Lett, 74, 1102-1104 (1999). (A.S.W. Lee, E.H. Li, and **G. Karunasiri**)
11. "Monitoring of TiSi₂ Formation on Narrow Polycrystalline Silicon Lines Using Raman Spectroscopy", IEEE Electron Device Letters, 19, 171-173 (1998). (E. H. Lim, **G. Karunasiri**, S. J. Chua, H. Wong, K. L. Pey, and K. H. Lee)
12. "Determination of Thermal Parameters of Microbolometers using a Single Electrical Measurement", Appl. Phys. Lett, 72, 1881-1883 (1998). (X. Gu, **G. Karunasiri**, G. Chen, U. Sridhar and B. Xu)
13. "A New On-chip Compensation of Self-heating Effects in Microbolometer Infrared Detector Arrays", Sensors & Actuators, 69, 92-96 (1998). (X. Gu, **G. Karunasiri**, J. Yu, G. Chen, W. J. Zeng, and U. Sridhar)
14. "Integration of SALICIDE Process for Deep-submicron CMOS Technology: Effect of Nitrogen/Argon-amorphized Implant on SALICIDE Formation", Materials Science & Engineering B, 51, 274-279 (1998). (C. S. Ho, K. L. Pey, H. Wong, **G. Karunasiri**, S. J. Chua, K. H. Lee and L. Chan)

15. "Characterization of Titanium Silicide by Raman Spectroscopy for Sub-Micron IC Processing", Microelectronic Engineering (1998). (E. H. Lim, **G. Karunasiri**, S. J. Chua, Z. X. Shen, H. Wong, K. L. Pey, K. H. Lee and L. Chan)
16. "Two-color Infrared Detection Using Intersubband Transitions in Multiple Step Quantum Wells with Superlattice Barriers", Appl. Phys. Lett., 71, 14-16 (1997). (Ting Mei, **G. Karunasiri**, and S. J. Chua)
17. "Effect of Presence and Type of Particulate Reinforcement on the Electrical Conductivity of non-heat Treatable Aluminum", Materials Science & Engineering A, 219, 133-141 (1996). (M. Gupta, **G. Karunasiri** and M. O. Lai)
18. "Thermionic Emission and Tunnelling in InGaAs/GaAs Quantum Well Infrared Detectors", J. Appl. Phys., 79, 1-3(1996). (**G. Karunasiri**)
19. "Normal Incident InGaAs/GaAs Multiple Quantum Well Infrared Detector Using Electron Intersubband Transitions", Appl. Phys. Lett., 67, 2600 (1995). (**G. Karunasiri**, J. S. Park, J. Chen, R. Shih, J. F. Scheihing, and M. A. Dodd)
20. "Heavily Silicon Doped InGaAlAs/InP Epilayers Grown by Molecular Beam Epitaxy", Journal of Crystal Growth, 156, 186 (1995). (A. Raman, S. J. Chua, **G. Karunasiri** and P. R. Vaya)
21. "Doping Dependence of Intersubband Transitions in SiGe/Si Multiple Quantum Wells", Materials Science & Engineering B (1995).(**G. Karunasiri**, S. J. Chua, J. S. Park, and K. L. Wang)
22. "Intersubband Transitions in Si-based Quantum Wells and Application for Infrared Photodetectors", Jap. J. Appl. Phys., 33, 2401 (1994). (**G. Karunasiri**) (Invited Paper)
23. "Infrared Photodetectors using SiGe/Si Multiple Quantum Wells", Optical Engineering, 33, 1468 (1994). (**R. P. G. Karunasiri**) (Invited Paper)
24. "SiGe/Si Electronics and Optoelectronics", J. Vac. Sci. Technol., 11, 1159 (1993). (K. L. Wang and **R. P. G. Karunasiri**)
25. "Si-based Quantum Well Intersubband Detectors", Proc. SPIE 1735, 182 (1993). (K. L. Wang and **R. P. G. Karunasiri**)
26. "Electron Intersubband Normal Incidence Absorption in InGaAs/GaAs Quantum Wells", J. Vac. Sci. Technol., 11, 922 (1993). (H. S. Li, **R. P. G. Karunasiri**, Y. W. Chen, and K. L. Wang)
27. "Normal Incidence Infrared Detector Using Inter-Valence-Subband Transition in SiGe/Si Multiple Quantum Wells", Appl. Phys. Lett., 61, 2434 (1992). (**R. P. G. Karunasiri**, J. S. Park, and K. L. Wang)
28. "Inter-valence-subband Transition in SiGe/Si Multiple Quantum Wells-Normal Incident Detection", Appl. Phys. Lett., 61, 681 (1992). (J. S. Park, **R. P. G. Karunasiri**, and K. L. Wang)
29. "Quantum Well Engineering for Intersubband Transitions--General Conduction Band Extrema and Valence Valley", NATO ASI Series, 288, 227 (1992). (K. L. Wang, S. K. Chun, and **R. P. G. Karunasiri**)
30. "Normal Incident Infrared Detector Using SiGe/Si Multiple Quantum Wells", Appl. Phys. Lett., 60, 103 (1992). (J. S. Park, **R. P. G. Karunasiri**, and K. L. Wang)

31. "Hole Intersubband Absorption of GeSi/Si and δ -doped Quantum Wells", Surf. Sci., 267, 74 (1992). (K. L. Wang, **R. P. G. Karunasiri**, and J. S. Park)
32. " SiGe/Si Multiple Quantum Well Infrared Detector", Appl. Phys. Lett., 59, 2588 (1991). (**R. P. G. Karunasiri**, J. S. Park and K. L. Wang)
33. "Effect of Hydrogenation on Hole Intersubband Absorption in δ -doped Si Layers", Appl. Phys. Lett., 59, 2248 (1991). (V. Arbet-Engles, K. L. Wang, **R. P. G. Karunasiri**, and J. S. Park)
34. "Hole Intersubband Absorption in δ -doped Multiple Si Layers", Appl. Phys. Lett., 58, 1083 (1991). (J. S. Park, **R. P. G. Karunasiri**, Y. J. Mii, and K. L. Wang)
35. "Quantum Devices Using SiGe/Si Heterostructures", J. Vac. Sci. Technol. B, 9, 2064 (1991). (**R. P. G. Karunasiri** and K. L. Wang) (Invited Paper)
36. "Internal Photoemission in CoGa/GaAs Schottky Barriers, Possible Injection of Electrons into X and L Valleys", J. Vac. Sci. Technol. A, 9, 987 (1991). (R. Arghavani, **R. P. G. Karunasiri**, T. C. Kuo, Y. K. Kim, and K. L. Wang)
37. "Observation of Large Oscillator Strengths for Both 1-2 and 1-3 Intersubband Transitions of Step Quantum Well", Appl. Phys. Lett., 56, 1046 (1990). (Y. J. Mii, K. L. Wang, **R. P. G. Karunasiri**, and P. F. Yuh)
38. "Intersubband Infrared Absorption GeSi/Si Superlattice by Photocurrent Measurement", Appl. Phys. Lett., 56, 1342 (1990). (**R. P. G. Karunasiri**, J. S. Park, K. L. Wang, and L-J. Cheng)
39. "Large Stark Shifts of the Local to Global State Intersubband Transitions in Step Quantum Wells", Appl. Phys. Lett., 56, 1986 (1990). (Y. J. Mii, **R. P. G. Karunasiri**, K. L. Wang, M. Chen, and P. F. Yuh)
40. "Tunable Infrared Modulator and Switch Using Stark Shift in Step Quantum Wells", Electron Device Letters, 11, 227 (1990). (**R. P. G. Karunasiri**, Y. J. Mii, and K. L. Wang)
41. "Intersubband Absorption in GeSi/Si Multiple Quantum Well Structures", Appl. Phys. Lett., 57, 1342 (1990). (**R. P. G. Karunasiri**, J. S. Park, Y. J. Mii, and K. L. Wang)
42. "Observation of Large Stark Shift in GeSi/Si Multiple Quantum Wells", J. Vac. Sci. Tech., B8, 214 (1990). (J. S. Park, **R. P. G. Karunasiri**, and K. L. Wang)
43. "Photoluminescence Characterization of Si_mGe_n Superlattices", J. Vac. Sci. Tech., B8, 217 (1990). (M. A. Kallel, V. Arbet, **R. P. G. Karunasiri**, and K. L. Wang)
44. "Study of Hole Transport Through Minibands in Symmetrically Strained GeSi/Si Superlattice", Thin Solid Films, 183, 25 (1989). (J. S. Park, **R. P. G. Karunasiri**, and K. L. Wang)
45. "Si/GeSi/Si Resonant Tunnelling Diode Doped by Thermal Boron Source", J. Vac. Sci. Technol. B 7 (2), 327-331, (1989). (S. S. Rhee, **R. P. G. Karunasiri**, C. H. Chern, J. S. Park, and K. L. Wang)
46. "Hole Miniband Transport Through a Symmetrically Strained GeSi/Si Superlattice Grown on a $\text{Ge}_{x/2}\text{Si}_{1-x/2}$ ", Appl. Phys. Lett., 54, 1564, (1989). (J. S. Park, **R. P. G. Karunasiri**, K. L. Wang, S. S. Rhee, and C. H. Chern)

47. "Growth and Characterization of Doped GaAs/AlGaAs Multiple Quantum Well Structures on Si Substrates for Infrared Detection", J. Vac. Sci. Technol. B 7 (2), 341-344, (1989). (Y. J. Mii, **R. P. G. Karunasiri** and K. L. Wang)
48. "Electrical and Optical Properties of GaAs/AlGaAs Multiple Quantum Wells Grown on Si Substrates", Appl. Phys. Lett., 53, 2050, (1988). (Y. J. Mii, **R. P. G. Karunasiri** and K. L. Wang)
49. "Rheed Observation of MBE-Grown GeSi on Silicon", J. Vac. Sci. Tech. B, 6(2) 721 (1988). (T. W. Kang, C. F. Huang, **R. P. G. Karunasiri**, J. S. Park, and K. L. Wang)
50. "Resonant Tunnelling of Variously Strained Si/GeSi/Si Heterostructure", Superlattices and Microstructures, 5 (2), 201-206, (1989). (K. L. Wang, **R. P. G. Karunasiri**, J. S. Park, S. S. Rhee, and C. H. Chern)
51. "Resonant Tunnelling through a Si/GeSi/Si Heterostructure on a GeSi Buffer Layer," Appl. Phys. Lett., 53, 204 (1988). (S. S.Rhee, J. S. Park, **R. P. G. Karunasiri**, Q. Ye and K. L. Wang)
52. "Infrared Absorption in Parabolic Multi-Quantum Well Structures", Superlattice and Microstructures, 4, 661 (1988). (**R. P. G. Karunasiri** and K. L. Wang)
53. "Infrared Transient Sensing", Optical Engineering, 27, 471 (1988). (D. D. Coon, **R. P. G. Karunasiri**, and S. V. Bandara)
54. "Interfacing Multispectral Sensors to Real Time Processors Based on Neural Network Models", Appl. Phys. Lett., 51, 961 (1987). (S. V. Bandara, D. D. Coon, and **R. P. G. Karunasiri**)
55. "Virtual Level Field Ionization Spectroscopy", Solid State Communications, 63, 1165 (1987). (S. D. Gunapala, **R. P. G. Karunasiri**, and D. D. Coon)
56. "Fast Response Quantum Well Photodetector", J. Appl. Phys. 60, 2636 (1986). (D. D. Coon, **R. P. G. Karunasiri**, and H. C. Liu)
57. "Green's Function Quantum-Defect Treatment of Impurity Photoionization in Semiconductors", Phys. Rev. B 33, 8228 (1986). (D. D. Coon and **R. P. G. Karunasiri**)
58. "Narrow Band IR Detection in Multiple Quantum Well Structures", Appl. Phys. Lett. 47, 289 (1985). (D. D. Coon, **R. P. G. Karunasiri**, and L. Z. Liu)
59. "Field Ionization Spectroscopy of Shallow Impurity Levels", Solid State Commun. 53, 1144 (1985). (D. D. Coon, S. D. Gunapala, **R. P. G. Karunasiri**, and H.-M. Muehlhoff)
60. "A High Sensitivity Sampling IR Detector", Infrared Phys. 25, 323 (1985). (D. D. Coon, S. D. Gunapala, **R. P. G. Karunasiri**, and H.-M. Muehlhoff)
61. "New Mode of Infrared Detection Using Quantum Wells", Appl. Phys. Lett. 45, 649 (1984). (D. D. Coon and **R. P. G. Karunasiri**)
62. "IR Detection by Depletion of Trapped Charge", Int. J. of Infrared and Millimeter Waves 5, 197 (1984). (D. D. Coon, S. D. Gunapala, **R. P. G. Karunasiri**, and H.-M. Muehlhoff)
63. "Integrating Infrared Detector with Electronically Modulated Response", Electronics Letters 19, 1070 (1983). (D. D. Coon, S. D. Gunapala, **R. P. G. Karunasiri**, and H.-M. Muehlhoff)

64. "Impurity-to-band Tunnelling in Semiconductors", J. Appl. Phys. 54, 5476 (1983). (S. Chaudhuri, D. D. Coon, and **R. P. G. Karunasiri**)
65. "Photoionization of Impurity Atoms in Semiconductors in the Presence of an Applied Field", Solid State Electronics 26, 1151 (1983). (D. D. Coon and **R. P. G. Karunasiri**)
66. "Effect of Electric Field on the Long Wavelength Response of Infrared Detectors", Electronics Letters 19, 284 (1983). (D. D. Coon and **R. P. G. Karunasiri**)